Microsoft Research

Coping with compiler complexity:
Language Description Language
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Programmers always want better languages than we can write compilers for

therefore, we need

new compiler writing techniques
to focus on the essence of the compiler instead of boring details

Parsing	Analysis & transformation	Code generation
already solved	focus of my research	outside scope

implemented by

Syntax tree traversals

techniques for compiler writers

'60

pointers, stacks & queues

generates ↑   ↓ focus on essence

challenges for compiler writers

'70

recursive functions → makes possible → big languages

generates ↑   ↓ focus on essence

generalized folds/algebras → makes possible → syntax extensions

'80

generates ↑   ↓ focus on essence

attribute grammars → makes possible → many features

our work

generates ↑   ↓ focus on essence

executable, modular specification → makes possible → feature interaction